Command 2010: Answering the Call

Transforming the way we stand the watch.

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Nowhere else in America can the devastation of a single event, whether natural or man-made, cripple our national economy and security on the same scale as it can in our ports. The lessons of 9/11 show that our ports are vulnerable and are targeted for potential terror acts. Events like Hurricane Katrina displayed the sheer magnitude of the cascading impact caused when port operations are disrupted. The aftermath of a natural disaster gives us only a little insight to the vast potential effects of a weapon of mass destruction (WMD) or other terrorist activities in our ports.

America's ports are economic chokepoints, with influence into the very heart of the country. When a West Coast labor strike shut down major ports like Long Beach and Los Angeles in 2002, it cost the U.S. economy $19 billion.[1] Nearly 95 percent of all overseas cargo flows through our maritime ports.[2] Adding to that, 80 percent of all cargo vessel offloads occur in only 20 U.S. ports.[3] All of these factors put a heavy burden on the men and women standing watch to protect our ports and harbors.

U.S. Coast Guard sectors are the primary responders for all threats and hazards in U.S. waters. After 9/11, the Coast Guard transformed its reactive, firehouse mentality of responding to the call. A new, proactive posture emerged, one that requires sectors to actively collect information on every vessel entering our ports. Sectors require information on the vessel's history, crew, and cargo to allow sector command centers to develop appropriate awareness, evaluate threat, and deploy finite resources to the right places.

In the past, Coast Guard missions were triggered by an alarm—a boater called "mayday," or reported oil in the water. In today's proactive environment, each and every vessel in the port is a mission trigger. The mere transit of a vessel triggers the start of a data-gathering mission that brings information to bear against the uncertainty of each vessel's intent. This new stance has tripled the task load in sector command centers. Port-level decision makers need new systems and tools to answer the call of these critical new functions. The Command 2010 initiative

will revolutionize command and control capability. Command 2010 will provide additional vessel-tracking sensors and will combine vessel tracks with historical data, law enforcement information, and intelligence through the common operational picture to increase interoperability among all levels of command.

This initiative arms sector commanders with surveillance and decision support systems, enhancing detection and monitoring within our ports and coastal regions, and improving "all-hazard, all-threat" incident deterrence, response, and recovery. Command 2010 closes the gap between our current response capabilities and the need for persistent port and coastal surveillance, information sharing, and real-time decision making.

Protecting our nation's ports is not a job we do alone. Now more than ever, the Coast Guard relies on strong partnerships with all the agencies operating in the port environment. Effective and seamless interoperability with all port partners is a critical element to prevention and response in a post-9/11 world. Command 2010 enables multiagency collaboration by seamlessly sharing situational awareness information with port partners. It also provides first-responder and law enforcement agencies with a common framework for recognizing potential terrorist activities.

To do all this, the Command 2010 requirements necessitate a holistic approach that transforms the entire watch. New systems alone are not enough; sector command centers need the people, doctrine, systems, and facilities to do the job. The operational requirements for Command 2010 address a broad spectrum of command center needs, including objectives for equipment, procedures, facilities, and staffing. All of these items are brought together in the Command 2010 capability set, which includes three main systems:

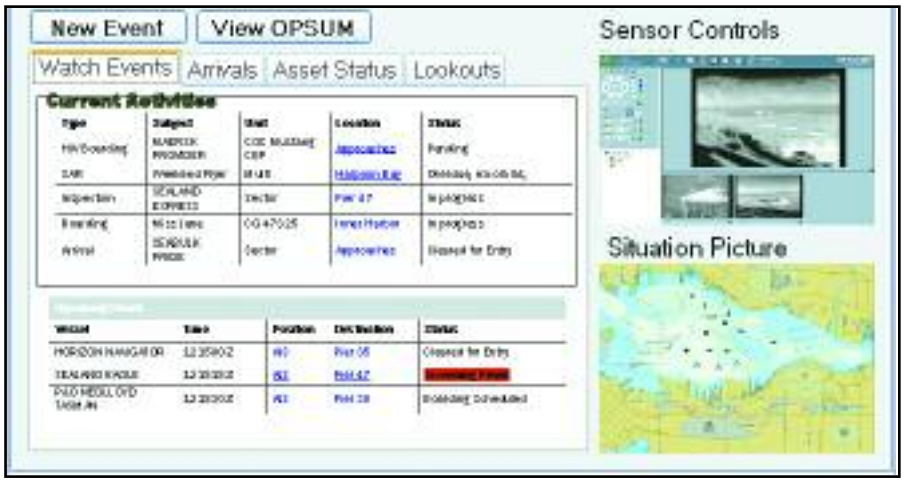
- surveillance,
- decision and mission support, and
- multiagency collaboration.

Surveillance

Command 2010 will cover America's most critical ports with a network of commercial, off-the-shelf radars, cameras, and other surveillance technology. The purpose of the surveillance system is to extend our maritime borders with a mix of sensors that allow for contact assessment and evaluation far from critical port infrastructure. These sensors will increase awareness of all activities in the port and coastal region. The surveillance system is tied together by a network infrastructure that connects all the sensors to the sector command center.

Command 2010 will then feed the Coast Guard common operational picture with track data from the new sensors. The sensor network will also be the backbone for future capabilities as well, such as automated anomaly detection and new sensor technologies.

The impact of new surveillance tools on Maritime Domain Awareness (MDA) cannot be overstated. Before testing various sensors in the port of Miami, the Coast Guard R&D Center assessed the state of MDA in our sector command centers. Without sensors, command centers were found to be aware of about 10 percent of the vessels and activities in the port at any given time. Additional simulation and modeling followed and a new watch structure emerged, one that integrated the new activities required to manage the sensor information and compose a situation picture, while preserving the routine and activities required for legacy missions. Awareness levels rose to 70 percent, as sensors from Project Hawkeye, a surveillance testbed in place at Sector Miami, were integrated into the watch routine. (See related article on Project Hawkeye.)



Command 2010 WatchKeeper system. USCG graphic provided by LCDR Bryan Bender.

Decision and Mission Support
The decision and mission support system, dubbed WatchKeeper, is the central IT engine that links information with operations. WatchKeeper is the primary watchstander interface that captures the actions, events, and processes of the watch. By automating many of the existing command center tools, such as quick-response cards, the situation information is gathered once and easily shared with other watchstanders, the sector command staff, and all port partners.

WatchKeeper integrates the planning cycle with response, creating a consistent path for information, from the beginning of a mission plan to the end of the operation. One of the key awareness elements of WatchKeeper is its ability to actively gather information about a vessel's history, crew, and cargo and associate that information with current behavior. It will have customizable rules and filters to mine data from a variety of Coast Guard and external information sources. WatchKeeper will also build an interface to connect with existing port sensors, like those fielded by other agencies or by port security grants.

WatchKeeper will provide multiple views of situation data, including a geographic view of the local tactical picture, location and status of Coast Guard and port partner boats and aircraft, and various views of current operations data—current case status, units assigned, etc. There may also be multiple visualizations of each of these views, displaying situation data in different ways, designed to help the user make sense of the information. WatchKeeper will also serve as a portal to other mission-essential applications. The computer-aided dispatch systems used by 911 centers for police, fire, and EMS dispatch is a common commercial software package that parallels many of the needs for WatchKeeper.

Collaboration
All the information collected by WatchKeeper will support a web-based collaboration portal founded on mature business collaboration technologies. This portal allows port partners to access situation data, operational schedules, and planning documents. At the heart of this collaboration will be automated notification and alert systems, designed to keep all port partners up to date on current operations. WatchKeeper will also provide access to the situation picture, and port partners will be able to add their schedules and events to the sector operations schedule.

When WatchKeeper and the collaboration portal are used together, they will form a backbone that supports joint planning and operations throughout the port. The web portal will also feature standard business collaboration functions such as document management, message boards, forums, and chat. To reach the end state of a joint operations center that facilitates joint planning and operations among all port partners, sectors need enhanced command center facilities in order to increase watchstander capacity and host port partners on the watchfloor.

The Command 2010 operational requirements are being developed as part of the planning phase for a new major system acquisition. The program is sponsored by the Systems and Architecture Office of the Maritime Domain Awareness Directorate. The Command 2010 matrix team has representatives from a number of USCG headquarter directorates that are focused on transforming the way we stand the watch.

Command 2010 is the engine that links information with operations. Using surveillance and information systems to enhance detection and monitoring within our ports and coastal regions, Command 2010 will provide sector command centers decision-making tools to improve all-hazard, all-threat incident deterrence, response, and recovery. Command 2010 arms decision makers with the mission support tools needed to turn awareness into action.

About the author:
LCDR Bryan Bender's 16-year Coast Guard career spans duties from ice breaking on the Great Lakes to buoy tenders in Honolulu. LCDR Bender holds a U.S. Coast Guard Master's License.

Endnotes:
[1] Iritani, E. and Dickerson, M, "The Port Settlement; Tallying Port Dispute's Costs."
[2] RDML Hereth's statement to House Judiciary Committee Subcommittee on Crime, Terrorism, and Homeland Security Hearing on Seaport and Cargo Security, March 15, 2005.
[3] "Vessel Calls at U.S. & World Ports 2005, Office of Statistical and Economic Analysis," U.S. Maritime Administration, April 2006.